

through the intestine. I never saw the nest of this species, nor do the natives seem cognisant of it.

64. *PHYLLORNIS MALABARICA*, Lath.

A rare species, and confined to the upland districts. Dr. Kelaart procured it at Nuwera Elia, and Muttoo brought in a single specimen whilst I lay ill at Gillymally.

65. *PHYLLORNIS JERDONI*, Blyth.

Extremely common in the south of Ceylon, but rare towards the north. It feeds in small flocks on seeds and insects, and builds an open cup-shaped nest. The eggs, four in number, are white, thickly mottled at the obtuse end with purplish spots.

66. *PHYLLORNIS AURIFRONS*, Temm. ?

Included by Dr. Kelaart in his catalogue; sed non vidi.

67. *DENDROPHILA FRONTALIS*, Horsf.

This elegant little creeper is abundant about jack-trees, among the branches of which it incessantly creeps in search of minute insects, examining the under as well as the upper sides, and the bold little climber courses upright or headlong with equal facility.

These birds always hunt in small parties, and the rapidity of their motions is such as to baffle the eye.

[To be continued.]

XIX.—On the Head of the Genus Conus, Linn.

By J. E. GRAY, Ph.D., F.R.S., V.P.Z.S. &c.

ADANSON (Voy. Seneg. t. 6), LESSON (Voy. Freycinet, t. 67. f. 7), QUOY and GAIMARD (Voy. Astrolabe, t. 52 & 83), PHILIPPI (Moll. Sicil. t. 12. f. 19), EHRENBURG (Sym. Phys. t. 2), EYDOUX and SOULEYET (Voy. Bonite, t. 45), and CHIAJE (Moll. Sicil. iii. t. 45), have described and figured the animal of the Cones as having an elongated muzzle or rostrum like the phytophagous univalve mollusks; and Lovèn, probably misled by these descriptions, expressly describes them as having "*rostrum productum non recondendum.*"

Never having had an opportunity of examining the mouth of these animals before the publication of the arrangement of the families which I proposed in the 'Annals and Magazine of Natural History' for Feb. 1853 (xi. 130), I placed the family *Conide* in the suborder *Rostrifera*.

Having lately, in pursuing my researches on the teeth of Mollusca, examined the mouth of several species of Cones, I was surprised to find that they were all provided with a distinct retractile proboscis, and that the part which had been mistaken for the rostrum was only a prolongation of the veil which unites the base of the tentacles, always found in the *Proboscidiifera*, but which in this genus is more developed, and assumes the semblance of a rostrum. This is the more remarkable, as Adanson specially describes the mouth of the rostrum as round and contracted, and some authors figure it as linear and inferior.

The veil in all the species I have examined is produced somewhat like a muzzle or rostrum, and is provided with a large aperture, which, when contracted in spirits, is oblong, transverse, and has a more or less large longitudinal slit on the centre of the upper surface, as is well represented in De Blainville's figure of the animal (Freycinet, Voy. t. 67. f. 7, copied by Mrs. Gray, Mollusca, t. 11. f. 8); but from the appearance of the animal when it has been placed in a weak solution of caustic potass, I believe that it is funnel-shaped and expanded at the end when the animal is alive; and Adanson particularly observes that the Cones use the mouth, as he calls the end of the veil, as a leech does its oral disk, to attach itself to any animal it touches.

In most specimens the veil is simple on the edge, but in others, as *Conus Tulipa* and *C. striatus*, it is fringed with a series of cylindrical beards or tentacles, as represented by Quoy and Gaimard (Voy. Astrol. t. 53. f. 2 & 12, copied by Mrs. Gray, Mollusca, t. 12. f. 2 & t. 10. f. 6).

The proboscis in its retracted state, as seen in the animal preserved in spirits, is short, broad, conical, annulate, prominent, in the base of the tubular veil, with a roundish central mouth. Instead of having any elongated lingual band covered with short transparent teeth, like the rest of the *Proboscidiifera* and *Rostrifera*, it has a fleshy tube with a bundle of subulate barbed teeth directed towards the mouth; this tube is prolonged behind and below at right angles with its upper part and mouth into an elongated, fleshy, attenuated subulate tube, containing with its hinder edge two series of similar subulate red barbed teeth directed from the aperture towards the apex of the tube.

The teeth are implanted by a distinct root into the substance of the tube; those near the upper or oral part of the tube are placed rather irregularly in two parallel rows, but those nearer the tip are more crowded, and the lines gradually diverge from each other.

I shall not attempt to describe the manner in which these teeth are brought into action, as I have only seen them in the preserved specimen; but those nearest the mouth are probably

used to pierce the animal, which is held fast by the contraction of the veil as described by Adanson. The organization and structure of the mouth are so unlike that of the other *Proboscidifera* and *Rostrifera*, where the teeth are placed on a lingual band and used to rasp the food, being replaced by others as those in action are injured by use, that I am inclined to form the *Cones* into a third suborder, which may be called *Toxifera*; and it is probable that the *Pleurotomidæ*, which are described by Lovèn as having similar subulate teeth in two series, should be placed in the same suborder, as they appear to differ from the *Cones* chiefly in the veil being truncated and not produced round the base of the proboscis,—a character of comparatively little importance, as the *Dolia*, and probably the *Cassides*, and some species of *Tritons*, have the veil more or less produced, forming a more or less distinct tube round the base of the proboscis, and giving the appearance of having a very short rostrum.

While on the subject, I may observe that the genera *Cassidulus*, *Cochlidium*, and I believe *Fulgur*, have the head produced into an elongated cone like a rostrum; but in these the tentacles, which are generally very small, are placed at the top of the cone on the side of the small apex, from which the very long retractile proboscis is emitted, as in the normal *Proboscidifera*. I am inclined, on account of this peculiarity in the form of the head, to separate these genera from *Muricidæ* and form for them the family *Cassidulidæ*.

I sent this communication in manuscript to Mr. Arthur Adams, that he might have the opportunity of placing the family *Conidæ* in its proper position in the forthcoming number of his 'Genera of Mollusca,' and he informs me that he has observed the veil of the genus expanded in the living animal, and referred me to the following observations made by him on the habits of these animals, showing that the theory I had ventured to propose is correct:—

"Its bite produces a venomous wound, accompanied by acute pain, and making a small deep triangular mark, which is succeeded by a watery vesicle. At the little island of Mayo, one of the Moluccas near Ternate, Sir Edward Belcher was bitten by one of the *Cones*, which suddenly exerted its proboscis as he took it out of the water with his hand, and he compared the pain he experienced to that produced by the burning of phosphorus under the skin The instrument which inflicted the wound in this instance was probably the tongue, which in these mollusks is long and armed with two ranges of sharp-pointed teeth." (Zool. Voy. Samarang, 19.) Mr. Adams informs me that it adhered to the hand by its mouth like a leech, as described by Adanson.